REMARKS

This responds to the Office Action mailed on <u>December 26, 2006</u>. Reconsideration is respectfully requested.

Claims <u>1, 2, 9, 14, 22, 25 – 27 and 31 – 32</u> are amended, claims <u>none</u> are canceled, and claims <u>none</u> are added; as a result, claims <u>1 - 32</u> are now pending in this application.

Objection to the Specifications

The Specification was objected to by the Examiner. The reason for the Examiner's objection to the specification is unclear as there is no specific objection. Applicants submit that the Specification meets the suggested arrangement provided in 37 C.F.R. 1.77(b) and that non-application sections do not need to be included.

Claim Objections

Claim 2 was objected to for a minor informality which has been corrected by this amendment. Claim 2 has been amended to address the informalities noted by the Examiner.

§101 Rejection of the Claims

Claims 31 and 32 were rejected under 35 U.S.C. § 101 because the claimed invention is directed to a non-statutory subject matter. Claims 31 and 32 have been amended to be directed to a storage medium having instructions stored thereon. Applicants' submit that claims 31 and 32, as amended, encompass statutory subject matter.

§102 and §103 Rejection of the Claims

Claims 1-4, 5-6, 9-10, 16, 21-22, 25-27 and 30-32 were rejected under 35 U.S.C. § 102(b) for anticipation by MacAulay et al. (WO 97/43732).

Claims 1, 9, 16-18, 20-22 and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over MacAulay et al. in view of Reiser et al. (U.S. 6,125,339).

Claims 1 and 7 were rejected under 35 USC § 103(a) as being unpatentable over MacAulay et al. in view of Reiser et al, and further in view of Maurer et al (U.S. 2001/003375).

Claims 1, 8-9, and 15-19 were rejected under 35 USC § 103(a) as being unpatentable over MacAulay et al. in view of Reiser et al., and further in view of Roth (U.S. 2003/0041053).

Claims 1, 9-11, and 21-23 were rejected under 35 USC § 103(a) as being unpatentable over MacAulay et al. in view of Reiser et al., and further in view of Wang (U.S. 2001/0051004).

Claims 1, 9-14, and 25-29 were rejected under 35 USC § 103(a) as being unpatentable over MacAulay et al. in view of Reiser et al., and further in view of Wang and Lee (U.S. 2003/0072470).

Applicants' independent claims 1, 21, 25, and 31 are directed to the identification of anomalous targets and recite that features are extracted from track files to generate first and second feature sets. Applicants' claims also recite that a first probabilistic belief function is generated from the first feature set and that a second probabilistic belief function is generated from the second feature set. Applicants' claims further recite that an output is generated from both belief functions that indicates whether or not at least some of the targets are anomalous. The belief functions are recited to be discrete probability functions comprising *probability distributions* describing when the targets are likely anomalous. As further recited in the claims, the belief functions are *updated* based on an experienced operator's analysis of the image with respect to the extracted features. Applicants' claims 1, 21, 25, and 31 further recite that the probability that a target is anomalous is an *arithmetic function of both* the first and second belief functions.

None of the cited references, either separately or in combination, teach, suggest or motivate the elements recited in Applicants' claims 1, 21, 25, and 31. For example, MacAulay discloses only a single criteria threshold to determine whether or not a patient has cancer (see MacAulay page 13 lines 2 – 9). Furthermore, there is no updating this threshold in any way, let alone by an expert. Applicants' claims recite the use of two probabilistic belief functions, not thresholds. The probabilistic belief functions are probability distributions describing when the targets are likely anomalous. Furthermore, Applicants' claims recite that an arithmetic function of the first and second belief functions is used to determine when a target is anomalous. The arithmetic combination of two features, for example, may improve the changes of determining whether or not the targets are anomalous. These recitations are not taught, suggested, or motivated by MacAulay.

In Applicants' claims 1, 21, 25, and 31, the belief functions are updated based on an experienced operator's analysis of the image with respect to the extracted features. In this way, Applicants' claimed system may be trained to better detect anomalies to exceed the error rate of a skilled human operator.

Applicants' claims 2, 22 and 26 for example, recite that the first feature set comprises a ratio of nucleus size to cell size, and the second feature set comprises cell reaction to stain or dye. In these claimed embodiments, an arithmetic function of these features may indicate a higher probability of the targets being cancerous. This is not taught, suggested, or motivated by any of the cited references.

Applicants further submit that combining MacAulay with any one or more of the other cited references can not result in Applicants' claimed invention because none of the following elements, among others, is taught, suggested, or motivated by the combination:

1) Belief functions being probability distributions;

2) Belief functions being updated based on an experienced operator's analysis; and

3) An arithmetic function of two belief functions defining the probability that a target is anomalous.

Reservation of Rights

In the interest of clarity and brevity, Applicant may not have addressed every assertion made in the Office Action. Applicants' silence regarding any such assertion does not constitute any admission or acquiescence. Applicant reserves all rights not exercised in connection with this response, such as the right to challenge or rebut any tacit or explicit characterization of any reference or of any of the present claims, the right to challenge or rebut any asserted factual or legal basis of any of the rejections, the right to swear behind any cited reference such as provided under 37 C.F.R. § 1.131 or otherwise, or the right to assert co-ownership of any cited reference. Applicant does not admit that any of the cited references or any other references of record are relevant to the present claims, or that they constitute prior art. To the extent that any rejection or assertion is based upon the Examiner's personal knowledge, rather than any objective evidence of record as manifested by a cited prior art reference, Applicant timely objects to such reliance on Official Notice, and reserves all rights to request that the Examiner provide a reference or

affidavit in support of such assertion, as required by MPEP § 2144.03. Applicant reserves all rights to pursue any cancelled claims in a subsequent patent application claiming the benefit of priority of the present patent application, and to request rejoinder of any withdrawn claim, as required by MPEP § 821.04.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicants' attorney at (480) 659-3314 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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2-15-2007

Date _____   By /_____ /
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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Mail Stop Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 15th day of February 2007.

KIMBERLY BROWN

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Name   Signature